FIG. 1

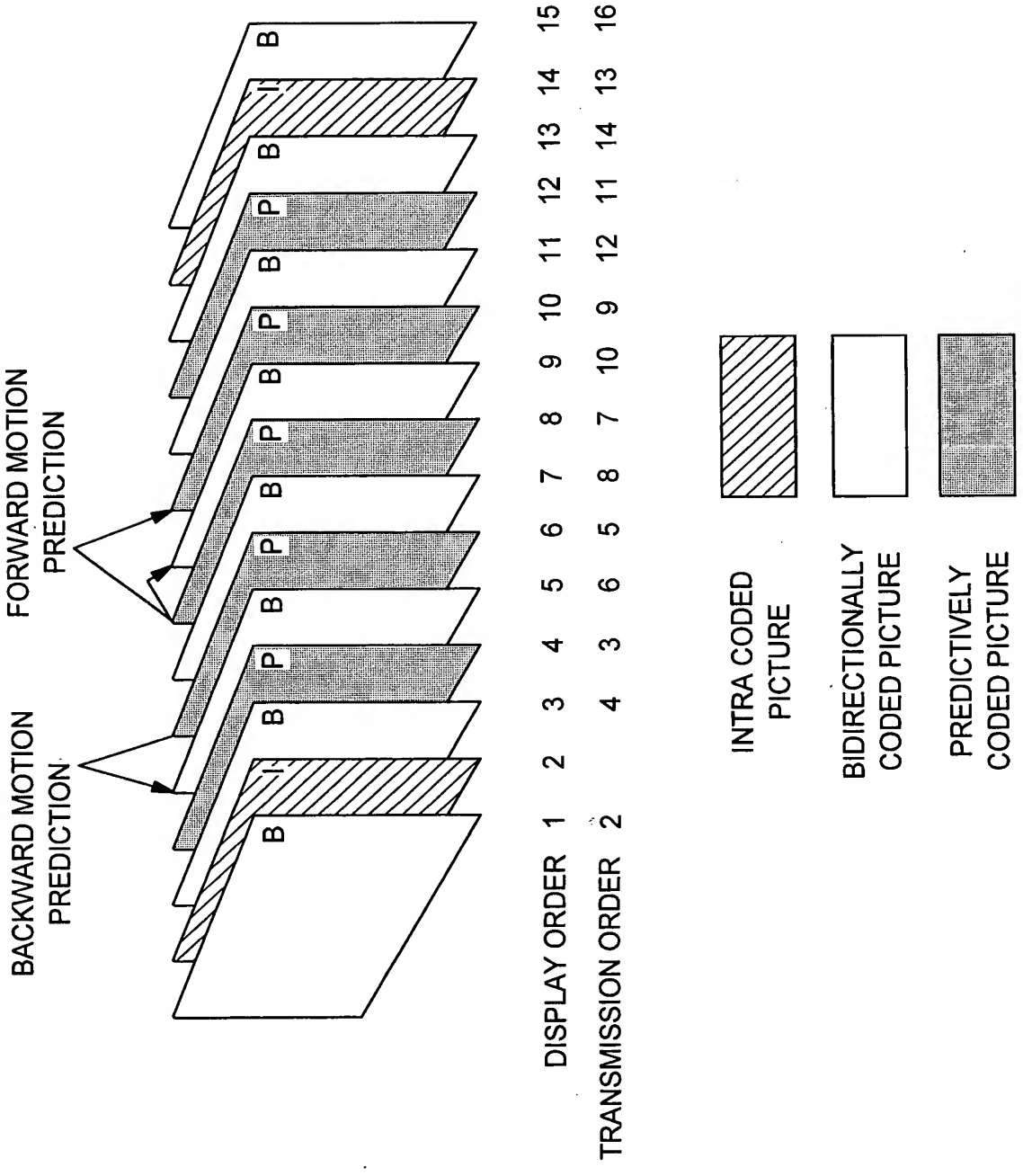

FORWARD MOTION PREDICTION
BACKWARD MOTION PREDICTION
I B B P B B P B B P B B P B B I B
DISPLAY ORDER 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16
TRANSMISSION ORDER 2 4 3 6 5 8 7 10 9 12 11 14 13 16
INTRA CODED PICTURE
BIDIRECTIONALLY CODED PICTURE
PREDICTIVELY CODED PICTURE

FIG. 2

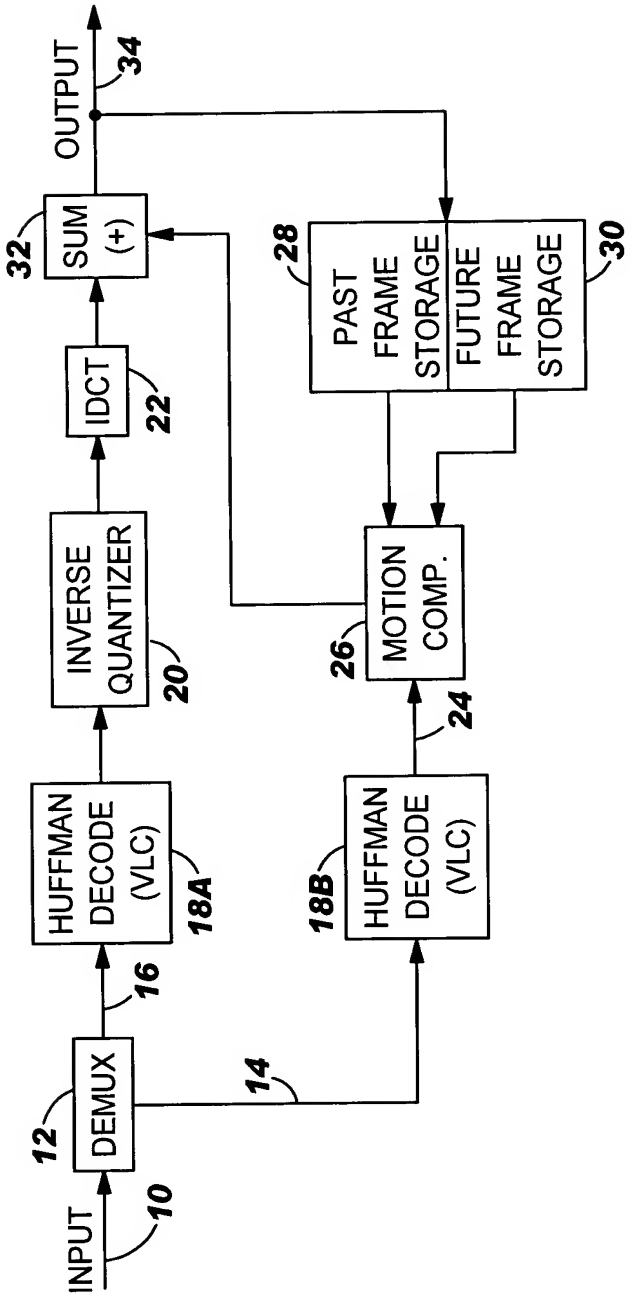

INPUT
10
DEMUX
12
14
HUFFMAN DECODE (VLC)
16
18A
HUFFMAN DECODE (VLC)
18B
INVERSE QUANTIZER
20
IDCT
22
MOTION COMP.
24
26
PAST FRAME STORAGE
28
FUTURE FRAME STORAGE
30
SUM (+)
32
OUTPUT
34

FIG. 3

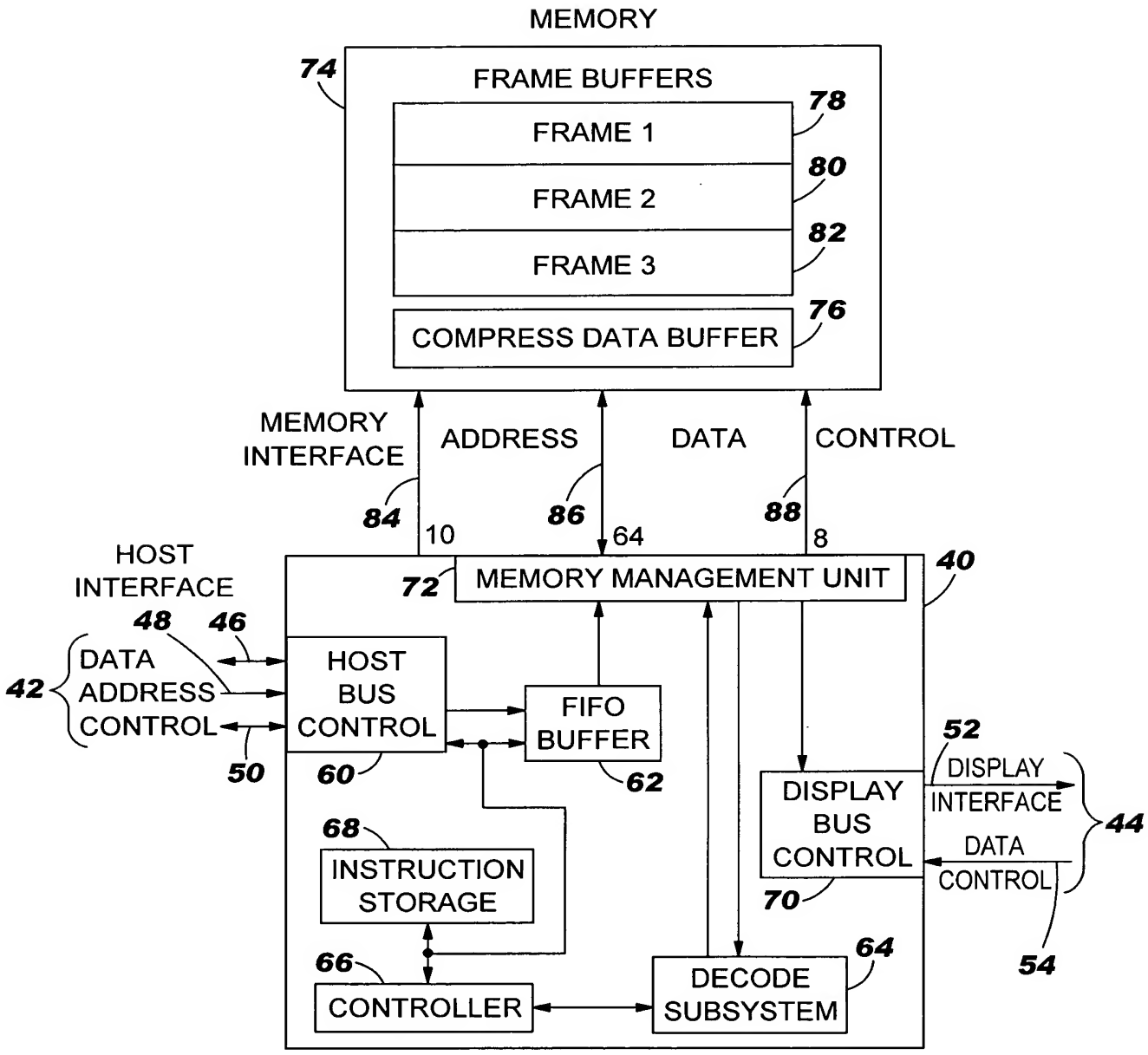

MEMORY
74
FRAME BUFFERS
78
FRAME 1
80
FRAME 2
82
FRAME 3
76
COMPRESS DATA BUFFER
MEMORY INTERFACE
ADDRESS
DATA
CONTROL
84
10
86
64
88
8
HOST INTERFACE
48
46
42
DATA
ADDRESS
CONTROL
50
72
MEMORY MANAGEMENT UNIT
40
HOST BUS CONTROL
60
FIFO BUFFER
62
52
DISPLAY INTERFACE
DISPLAY BUS CONTROL
DATA CONTROL
44
70
54
68
INSTRUCTION STORAGE
66
CONTROLLER
64
DECODE SUBSYSTEM

FIG. 4

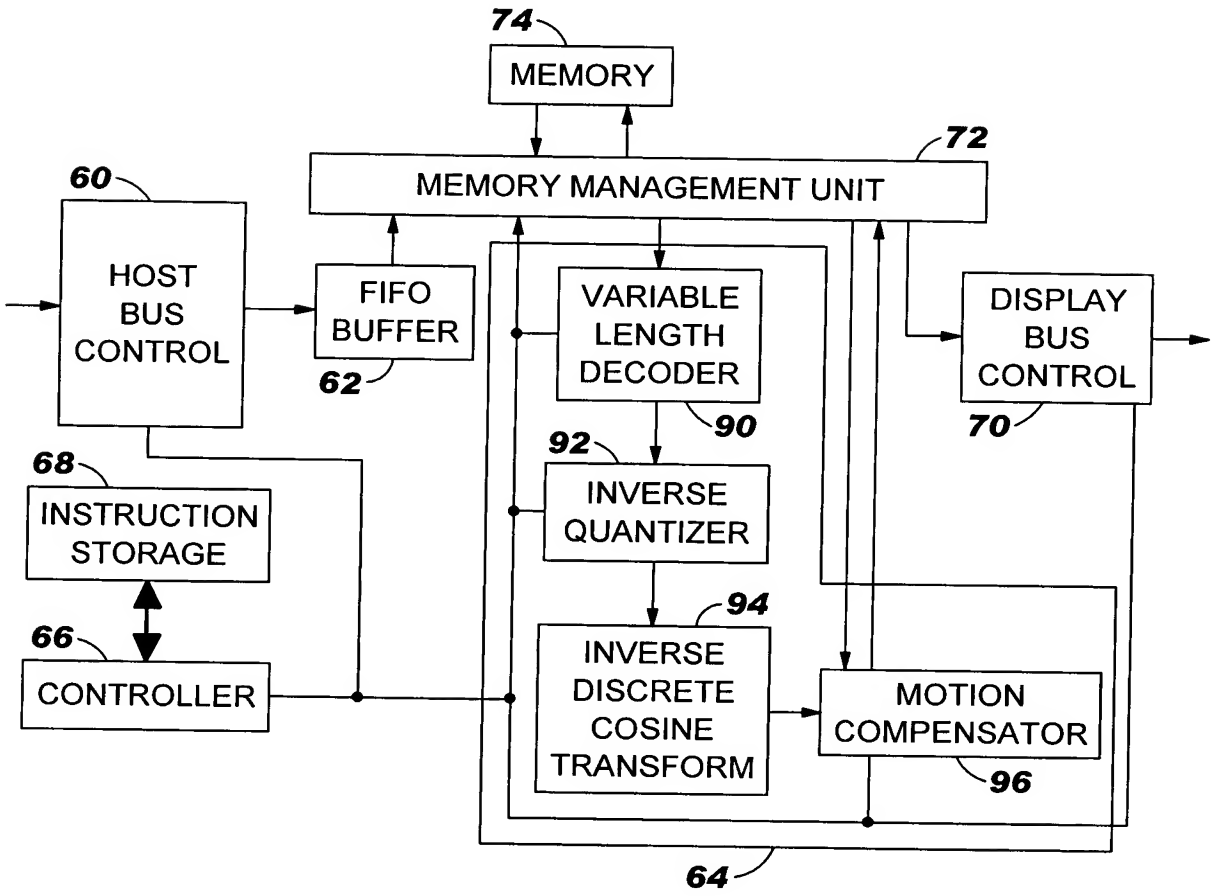

74
MEMORY
72
MEMORY MANAGEMENT UNIT
60
HOST BUS CONTROL
FIFO BUFFER
62
VARIABLE LENGTH DECODER
90
DISPLAY BUS CONTROL
70
92
INVERSE QUANTIZER
68
INSTRUCTION STORAGE
94
INVERSE DISCRETE COSINE TRANSFORM
66
CONTROLLER
MOTION COMPENSATOR
96
64

FIG. 5

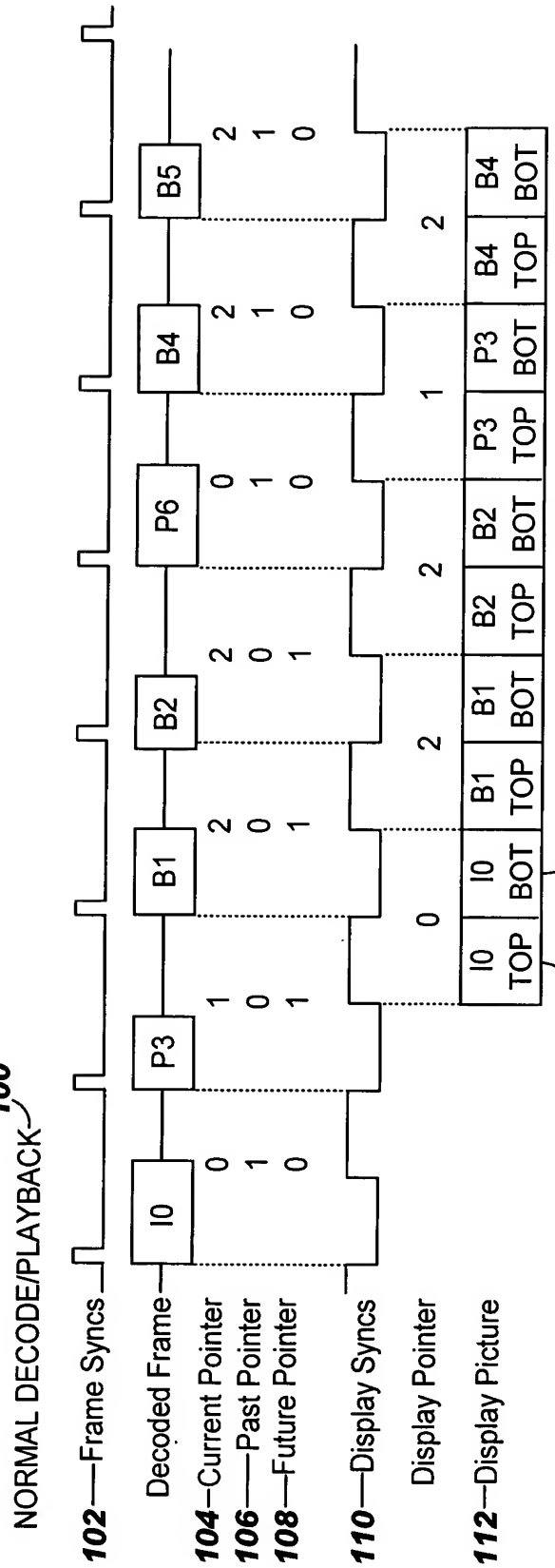
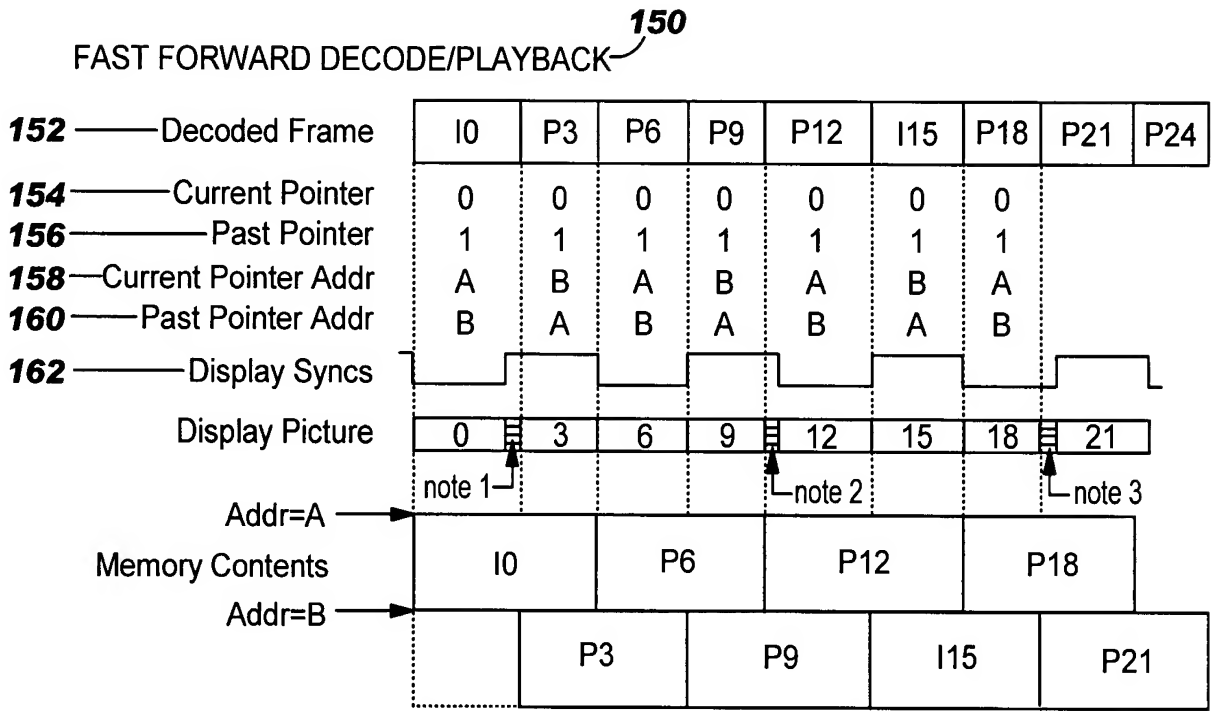

NORMAL DECODE/PLAYBACK
100
102—Frame Syncs
Decoded Frame
104—Current Pointer
106—Past Pointer
108—Future Pointer
110—Display Syncs
Display Pointer
112—Display Picture
I0
P3
B1
B2
P6
B4
B5
0
1
2
I0 TOP
I0 BOT
B1 TOP
B1 BOT
B2 TOP
B2 BOT
P3 TOP
P3 BOT
B4 TOP
B4 BOT
114A
114B

FIG. 6

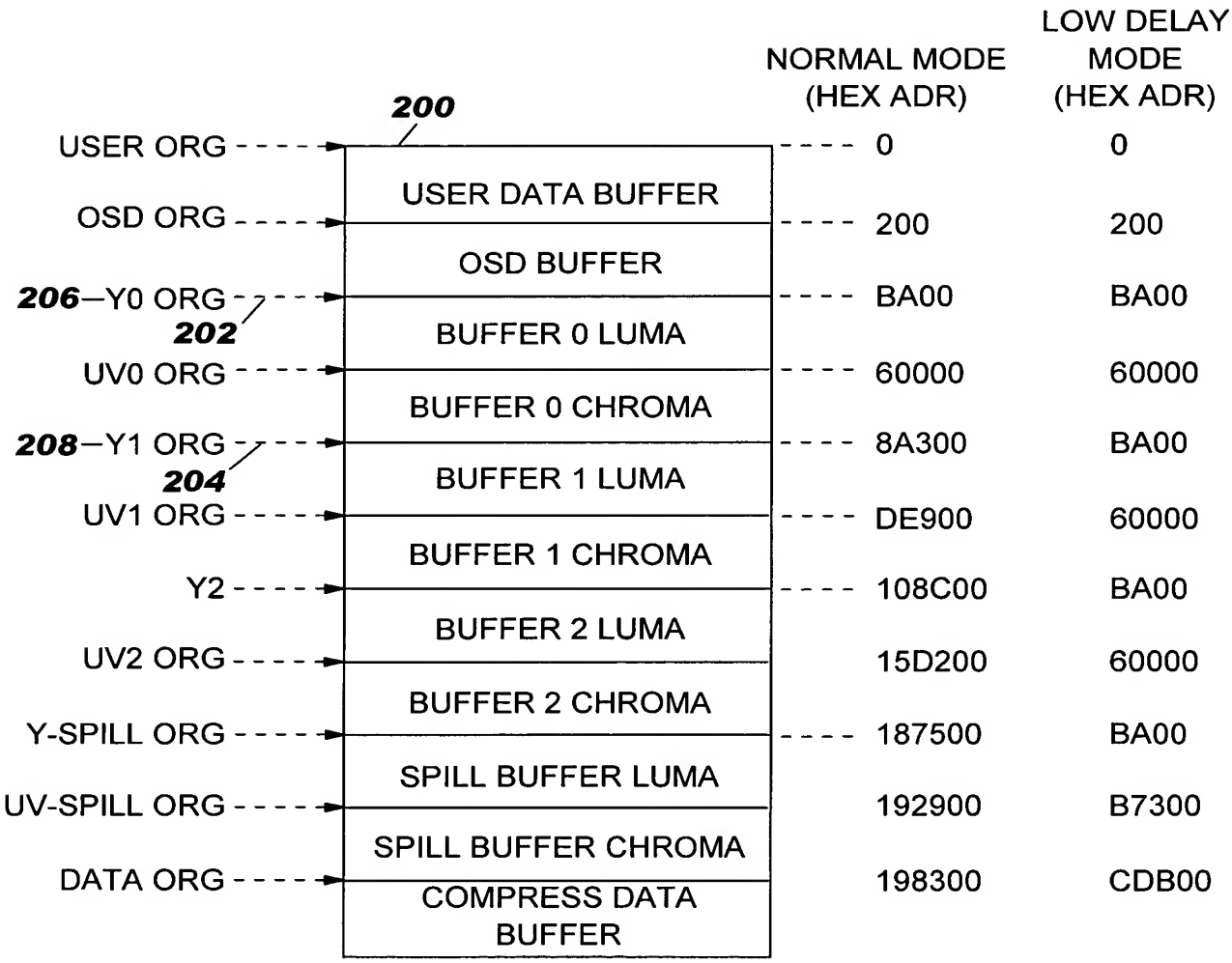


Note 1 - Top portion is formed from picture 0 since picture 3 has not decoded yet

Note 2 - Bottom portion is formed by picture 6 since picture 12 has not decoded far enough yet

Note 3 - Bottom portion is taken from picture 15 since picture 21 has not decoded far enough yet

FIG. 7


200
NORMAL MODE (HEX ADR)
LOW DELAY MODE (HEX ADR)
USER ORG
USER DATA BUFFER
0
0
OSD ORG
OSD BUFFER
200
200
206—Y0 ORG
202
BUFFER 0 LUMA
BA00
BA00
UV0 ORG
BUFFER 0 CHROMA
60000
60000
208—Y1 ORG
204
BUFFER 1 LUMA
8A300
BA00
UV1 ORG
BUFFER 1 CHROMA
DE900
60000
Y2
BUFFER 2 LUMA
108C00
BA00
UV2 ORG
BUFFER 2 CHROMA
15D200
60000
Y-SPILL ORG
SPILL BUFFER LUMA
187500
BA00
UV-SPILL ORG
SPILL BUFFER CHROMA
192900
B7300
DATA ORG
COMPRESS DATA BUFFER
198300
CDB00